

Claims

1. A composition comprising a mixture of cell wall degrading enzymes.
2. The composition of claim 1, wherein said enzymes of said composition are produced recombinantly.
- 5 3. The composition of claim 1, wherein said mixture is isolated from a microorganism.
4. The composition of claim 3, wherein said microorganism is a fungus.
5. The composition of claim 4, wherein said fungus is selected from the group consisting of:
Trichoderma, *Pencillium* and *Aspergillus*.
6. The composition of claim 4 wherein said fungus is the TW-1 mutant strain of
10 *Trichoderma longibrachiatum*.
7. The composition of claim 1, wherein said enzymes comprise carbohydrases.
8. The composition of claim 1, wherein said mixture comprises cellulases, β -glucanases, mannanases, xyloglucanases, pectinases, glycosidases and xylanases.
9. The composition of claim 1, wherein said mixture comprises at least one of the enzymes
15 selected from the group consisting of cellulases, β -glucanases, mannanases, xyloglucanases, pectinases, glycosidases and xylanases.
10. The composition of claim 1 further comprising a digestion buffer comprising a DNA preserving agent.
11. The composition of claim 10, wherein said DNA preserving agent is EDTA.
- 20 12. The composition of claim 10, wherein said digestion buffer further comprises at least one of a non-ionic detergent and PEG.
13. The composition of claim 12 wherein said detergent is Triton-X-100.
14. The composition of claim 10, wherein said digestion buffer has a pH of 5.0.
15. A method for isolating DNA from plant tissue comprising:
25 combining a sample of plant tissue with a mixture of cell wall degrading enzymes, and

incubating said plant tissue and said mixture of cell wall degrading enzymes.

16. The method of claim 15, wherein said enzymes of said mixture are produced recombinantly.
17. The method of claim 15, wherein said mixture is isolated from a microorganism.
- 5 18. The method of claim 15, wherein said microorganism is a fungus.
19. The method of claim 18, wherein said fungus is selected from the group consisting of: *Trichoderma*, *Pencillium* and *Aspergillus*.
20. The method of claim 18 wherein said fungus is the TW-1 mutant strain of *Trichoderma longibrachiatum*.
- 10 21. The method of claim 15, wherein said enzymes comprise carbohydrases.
22. The method of claim 15, wherein said mixture comprises cellulases, β -glucanases, mannanases, xyloglucanases, pectinases, glycosidases and xylanases.
23. The method of claim 15, wherein said mixture comprises at least one of cellulases, β -glucanases, mannanases, xyloglucanases, pectinases, glycosidases and xylanases.
- 15 24. The method of claim 15, wherein said incubation is performed in the presence of a digestion buffer comprising a DNA preserving agent.
25. The method of claim 24, wherein said DNA preserving agent is EDTA.
26. The method of claim 24 wherein said digestion buffer further comprises at least one of a non-ionic detergent and PEG.
- 20 27. The method of claim 26, wherein said detergent is Triton-X-100.
28. The method of claim 24, wherein said buffer has a pH of 5.0.
29. The method of claim 15, wherein said incubation is performed at 50°C.
30. The method of claim 15, wherein said combination of said mixture of cell wall degrading enzymes and said sample are agitated at 250 rpm for 1-16 hours.

31. The method of claim 15, further comprising the steps of adding a DNA-binding solid support and binding said DNA to said solid support after said incubation step.
32. The method of claim 15, wherein said method is automated.
33. A kit for isolating DNA from plant tissue comprising a mixture of cell wall degrading enzymes and packaging means thereof.
34. The kit of claim 33, wherein said enzymes of said mixture are prepared recombinantly.
35. The kit of claim 34, wherein said mixture is isolated from a microorganism.
36. The kit of claim 35, wherein said microorganism is a fungus.
37. The kit of claim 36, wherein said fungus is selected from the group consisting of: *Trichoderma*, *Penicillium* and *Aspergillus*.
38. The kit of claim 36 wherein said fungus is the TW-1 mutant strain of *Trichoderma longibrachiatum*.
39. The kit of claim 33, wherein said enzymes comprise carbohydrases.
40. The kit of claim 33, wherein said mixture comprises cellulases, β -glucanases, mannanases, xyloglucanases, pectinases, glycosidases and xylanases.
41. The kit of claim 33, wherein said mixture comprises at least one of cellulases, β -glucanases, mannanases, xyloglucanases, pectinases, glycosidases and xylanases.
42. The kit of claim 33, further comprising a digestion buffer comprising a DNA preserving agent.
43. The kit of claim 42, wherein said DNA preserving agent is EDTA.
44. The kit of claim 42 wherein said digestion buffer further comprises at least one of a non-ionic detergent and PEG.
45. The kit of claim 44, wherein said detergent is Triton-X-100.
46. The kit of claim 42, wherein said digestion buffer has a pH of 5.0.

47. The kit of claim 33, further comprising a DNA-binding solid support.